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(71) Applicant (for all designated States except US): BOARD
OF TRUSTEES OPERATING MICHIGAN STATE
UNIVERSITY [US/US]; 246 Administration Building,
East Lansing, Michigan 48824-1046 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): FROST, John
[US/US]; 1621 Dobie Circle, Okemos, Michigan 48864
(US).

(74) Agents: FALCOFF, Monte et al.; Harness, Dickey &
Pierce, P.L.C., P.O. Box 828, Bloomfield Hills, Michigan
48303 (US).

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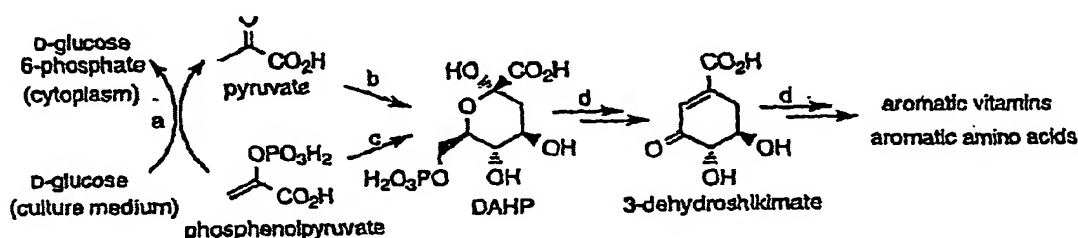
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(54) Title: METHODS AND MATERIALS FOR THE PRODUCTION OF SHIKIMIC ACID



(a) carbohydrate phosphotransferase; (b) KDPGal aldolase, D-erythrose 4-phosphate;
(c) DAHP synthase, D-erythrose 4-phosphate; (d) shikimate pathway enzymes

(57) Abstract: Novel enzymes and novel enzymatic pathways for the pyruvate-based synthesis of shikimate or at least one interme-
diate thereto or derivative thereof, nucleic acids encoding the enzymes, cells transformed therewith, and kits containing said enzymes,
cells, or nucleic acid. A KDPGal aldolase is used to perform condensation of pyruvate with D-erythrose 4-phosphate to form 3-de-
oxy-D-arabino-heptulosonate-7-phosphate (DAHP); a 3-dehydroquinase synthase is used to convert the DAHP to 3-dehydroquinase
(DHQ); DHQ dehydratase can then convert DHQ to the key shikimate intermediate, 3-dehydroshikimate.